

NON-PUBLIC?: N
ACCESSION #: 9206250154
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Virgil C. Summer Nuclear Station PAGE: 1 OF 4

DOCKET NUMBER: 05000395

TITLE: Reactor Trip During Repair of Nuclear Instrumentation Due to
Personnel Error
EVENT DATE: 05/20/92 LER #: 92-003-00 REPORT DATE: 06/16/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 2 POWER LEVEL: 003

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: W. R. Higgins Supervisor Licensing TELEPHONE: (803) 345-4042
Support & Operating Experience

COMPONENT FAILURE DESCRIPTION:
CAUSE: A SYSTEM: IG COMPONENT: MANUFACTURER:
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On May 20, 1992, the plant was in mode 2 with reactor power at approximately 3% and secondary system warmup in progress when the reactor tripped on intermediate range high flux. At the time of the trip, operations personnel observed annunciator alarms for intermediate range high flux and instrument inverter trouble. A review of plant performance following the trip determined that equipment response was as expected and that there had been no automatic actuation of Engineered Safety Features systems.

The cause of the event is attributed to personnel error. I&C technicians replacing a defective power supply in the power range nuclear instrument NI-42 drawer shorted the incoming power to ground causing a voltage transient. The power source for NI-42 is common to intermediate range channel NI-36, so it is believed that the short circuit caused a low

voltage condition that activated the high flux bistable in NI-36 initiating the reactor trip.

South Carolina Electric & Gas Company has cautioned I&C personnel in the importance of using available technical information and correct safety practices during repair activities. Additional procedural guidance for troubleshooting/repair activities and enhancements to the craft training program are being developed. These actions are expected to be in place by January 1, 1993.

END OF ABSTRACT

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PLANT IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION:

Excore Monitoring System - EHS - IG

IDENTIFICATION OF EVENT:

On May 20, 1992, at 1126 hours, the reactor tripped on intermediate range high neutron flux with the plant at approximately 3% power level. At the time of the trip, a plant startup was in progress and Instrumentation & Control (I&C) personnel were replacing a power supply to power range nuclear instrument NI-42.

During the repair, the Technicians shorted the incoming power causing a voltage fluctuation, which affected operation of the adjacent intermediate range channel NI-36, that initiated the reactor trip. The cause of the event is considered to be personnel error.

EVENT DATE AND TIME:

May 20, 1992, at 1126 hours.

REPORT DATE:

June 16, 1992

This report was initiated by Off-Normal Occurrence Report 92-037.

CONDITIONS PRIOR TO EVENT:

Mode 2, 3% reactor power

DESCRIPTION OF EVENT:

On May 20, 1992, Virgil C. Summer Nuclear Station (VCSNS) was commencing a plant startup from a maintenance outage. The plant was in Mode 2 with reactor power at approximately 3% and secondary system warmup in progress when the reactor tripped on intermediate range high flux. At the time of the trip, operations personnel observed annunciator alarms for intermediate range high flux and

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instrument inverter trouble. The plant was stabilized in Mode 3 until a post trip review could determine cause and evaluate equipment response during the event.

A review of plant performance following the trip determined that equipment response was as expected and that there had been no automatic actuation of Engineered Safety Features systems. Although the sequence of events log indicated that a high neutron flux occurred on an intermediate range instrument, a review of the historic data for the power range and intermediate range instruments did not indicate any actual high flux conditions.

CAUSE OF EVENT:

The cause of the event is attributed to personnel error. I&C technicians replacing a defective power supply in the power range nuclear instrument NI-42 drawer shorted the incoming power to ground causing a voltage transient. The power source for NI-42 is also common to intermediate range channel NI-36. The short circuit caused a low voltage condition for approximately 35 milliseconds that activated the high flux bistable in NI-36 thus initiating the reactor trip. The bistable has a normally energized relay which would be de-energized on either loss of voltage or a high flux signal.

The personnel error resulted from an inadequate review of precautions and component removal guidance contained in the technical manual before attempting to remove the power supply. Since the instructions in the manual were not utilized, the technicians incorrectly assumed that NI-42 was electrically de-energized following removal of the front panel fuses and that the power supply had to be removed from the bottom of the drawer. Believing the drawer to be de-energized, the technicians grounded line filters on the bottom of the drawer assembly to remove any

residual charge and possible shock hazard during the repair activity. Since these filters are located on the incoming power upstream of the panel fuses the resultant short circuit to the incoming power caused the above noted voltage transient.

ANALYSIS OF EVENT:

This report is being submitted pursuant to the requirements of 10CFR50.73 (2)(a)(iv). Notification to the NRC Operations Center via the Emergency Notification System was made at 1309 hours on May 20, 1992, per the requirements of 10CFR50.72(b)(2)(ii).

A post trip review failed to identify any unacceptable performance

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of safety systems. All safety systems in operation continued to function as required and no automatic actuation of Engineered Safety Features systems occurred.

IMMEDIATE CORRECTIVE ACTION:

The plant was stabilized in Mode 3 and plans initiated to restart the unit following identification of the initiating signal which caused the reactor trip. Additionally, I&C personnel completed the repair activity which initiated the trip and verified operability of NI-42 before the plant was restarted.

ADDITIONAL CORRECTIVE ACTION:

The following additional actions have been initiated to prevent a similar recurrence:

1. Management has emphasized to I&C personnel the importance of using repair information contained in technical manuals, verifying whether equipment is de-energized, and work safety practices during performance of their work. This action was completed on June 1, 1992.
2. The generic maintenance and troubleshooting procedure (GMP-100.005) used by I&C is lacking clear and concise guidance. This procedure will be revised by August 1, 1992, to correct this deficiency.
3. Additional troubleshooting and repair procedures will be developed for critical components to provide more specific guidance. Information contained in these procedures will be designed to

relieve the reliance on vendor information. This action is expected to be complete by January 1, 1993.

4. Enhancements to the craft training program in the areas of troubleshooting and repair techniques will be implemented. The review of this program and initiation of improvements will be completed by January 1, 1993.

PRIOR OCCURRENCES:

None.

ATTACHMENT 1 TO 9206250154 PAGE 1 OF 1

SCE&G South Carolina Electric & Gas Company 10CFR50.73
P.O. Box 88 John L. Skolds
Jenkinsville, SC 29065 Vice President
(803) 345-4040 Nuclear Operations

June 16, 1992

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
LER 92-003 (ONO 920037)

Attached is Licensee Event Report No. 92-003 for the Virgil C. Summer Nuclear Station. This report is submitted pursuant to the requirements of 10CFR50.73(2)(a)(iv).

Should there be any questions, please call us at your convenience.

Very truly your

John L. Skolds
CJM:JLS:cjm
Attachment

c: O. W. Dixon J. W. Flitter
R. R. Mahan L. J. Montondo

R. J. White NRC Resident Inspector
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